

### **AMENDMENT TO THE CLAIMS**

The following claims provided under the heading "Listing of Claims" replace all prior versions, and listings, of claims in the above-identified pending patent application.

#### **Listing of Claims:**

**Claim 1 (Currently Amended):** A method for presenting data and functions to a user via a presentation layer, for use in a distributed processing system to effect an interface between a business layer and the presentation layer, the method comprising the steps of:

~~defining providing~~ a data set structure which implements an abstract interface for use in both the business layer and the presentation layer, said data set structure comprising hierarchical organizational information for arranging one of data and functions into at least one tree structure, the tree structure being configured to store one of data and functions of arbitrary type navigable without regard to the type of data or function being processed;

populating a business layer data set in said business layer according to said data set structure, said business layer data set comprising data and functions available for use in said business layer; ~~and~~

instantiating the business layer data set in said business layer as beans;

serializing the beans into XML;

transporting the serialized beans to the presentation layer using the Simple Object Access Protocol (SOAP);

deserializing the serialized beans in the presentation layer; and

populating a presentation layer data set in said presentation layer according to said data set structure from said business layer data set encoded as beans, said presentation layer data set comprising data and functions available for use by the user in said presentation layer.

**Claim 2 (Currently Amended):** A method in accordance with claim 1 wherein ~~defining~~ providing a data set structure comprises ~~defining~~ providing a plurality of items, an item being an abstract element of arbitrary type, comprising a plurality of data items and a plurality of function items.

**Claim 3 (Currently Amended):** A method in accordance with claim 2 wherein ~~defining~~ providing a plurality of data items comprises ~~defining~~ providing a data value for each of said plurality of data items.

**Claim 4 (Currently Amended):** A method in accordance with claim 2 wherein ~~defining~~ providing a plurality of data items comprises ~~defining~~ providing a domain for each of said plurality of data items, the domain corresponding to the data type of a data item.

**Claim 5 (Currently Amended):** A method in accordance with claim 4 wherein ~~defining~~ providing a domain for each of said data items comprises ~~defining~~ providing a domain home for each of said plurality of data items, the domain home being a means of locating a domain.

**Claim 6 (Currently Amended):** A method in accordance with claim 4 wherein ~~defining~~ providing a domain for each of said data items comprises ~~defining~~ providing a context for each of said plurality of data items, the context providing means for distinguishing between otherwise identical domains.

**Claim 7 (Currently Amended):** A method in accordance with claim 4 wherein ~~defining~~ providing a domain for each of said data items comprises ~~defining~~ providing a range domain for each of said plurality of data items, the range domain corresponding to those domains that have a continuous range of values, bound by an upper and lower limit.

**Claim 8 (Currently Amended):** A method in accordance with claim 4 wherein ~~defining~~ providing a domain for each of said plurality of data items comprises ~~defining~~ providing a discrete domain for each of said plurality of data items, the discrete domain corresponding to those domains that have an explicit list of permitted values.

**Claim 9 (Currently Amended):** A method in accordance with claim 2 wherein ~~defining~~ providing a plurality of function items comprises ~~defining~~ providing a function for each of said plurality of function items.

**Claim 10 (Currently Amended):** A method in accordance with claim 2 wherein ~~defining~~ providing a plurality of function items comprises ~~defining~~ providing a function set for each of said plurality of function items.

**Claim 11 (Currently Amended):** An apparatus for use in a distributed data processing system comprising:

at least one server for:

providing a data set which implements an abstract interface for storing available data and identification of function calls, one of said data and function calls being arranged in at least one tree structure, the tree structure being configured to store ~~configured to store one of data and functions of arbitrary type~~ navigable without regard to the type of data or function call being processed;

populating a presentation business layer configured to store data and identification of function calls that are available for use by ~~a user said presentation layer~~ in accordance with said data set; and

instantiating the business layer data set in said business layer as beans;

serializing the beans into XML;

transporting the serialized beans to the presentation layer using the Simple Object Access Protocol (SOAP);

deserializing the serialized beans in the presentation layer; and

populating a business presentation layer configured to store data and identification of function calls that are available for use by ~~a user said presentation layer~~ in accordance with said data set encoded as beans.

**Claim 12 (Original):** An apparatus in accordance with claim 11 wherein said presentation layer is further configured to request data and identification of function calls from said business layer and to store said data and identification of function calls in accordance with said data set so that data and identification of function calls of said business layer can be available to said presentation layer.

**Claim 13 (Currently Amended):** An apparatus in accordance with claim 12 wherein said business layer comprises a plurality of processors wherein each of said processors at least one server is configured to store data and identification of function calls that are available for use by said presentation layer in accordance with said data set wherein said at least one server ~~each of said processors~~ provides unique data and identification of function calls to said presentation layer.

**Claim 14 (Original):** An apparatus in accordance with claim 13 wherein business layer function calls are available to said presentation layer for execution at said presentation layer via said data set.

**Claim 15 (Original):** An apparatus in accordance with claim 13 wherein business layer function calls are available to said presentation layer for execution at said business layer via said data set.

**Claim 16 (Original):** An apparatus in accordance with claim 13 wherein business layer function calls are available at said presentation layer for execution at both said presentation layer and at said business layer via said data set.

**Claim 17 (Currently Amended):** A method for presenting data and functions to a user via a presentation layer, for use in a distributed processing system to effect an interface between a business layer and the presentation layer, the method comprising the steps of:

providing ~~defining~~ a data set structure which implements an abstract interface for use in both the business layer and the presentation layer, said data set structure comprising hierarchical organizational information for arranging on of data and functions into at least one tree structure, the true structures being configured to store one of data and functions of arbitrary type navigable without regard to the type of data or function being processed, and which ~~defines~~ provides a plurality of data items and a plurality of function items, wherein each of said plurality of data items ~~defines~~ provides a data value, a range domain, and a context, the range domain having a domain home, and wherein each of said plurality of function items ~~defines~~ provides at least one function;

populating a business layer data set in said business layer according to said data set structure, said business layer data set comprising data and functions available for use in said business layer; and

instantiating the business layer data set in said business layer as beans;

serializing the beans into XML;

transporting the serialized beans to the presentation layer using the Simple Object Access Protocol (SOAP);

deserializing the serialized beans in the presentation layer; and

populating a presentation layer data set in said presentation layer according to said data set structure encoded as beans from said business layer data set, said presentation layer data set comprising data and functions available for use by the user in said presentation layer.